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09/553,143	04/20/2000	Philip L. Swan	0100.0000230	4441

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EXAMINER

TRAN, TRANG U

ART UNIT

PAPER NUMBER

2614

DATE MAILED: 04/08/2003

05

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary

Application No.

09/553,143

Applicant(s)

SWAN ET AL.

Examiner

Trang U. Tran

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 January 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed Jan. 27, 2003 have been fully considered but they are not persuasive.

In re pages 1-5, applicants argue, with respect to claim 1, that neither Herrera nor Faroudja discloses or suggests the claimed "receiving at least one instruction for a 2-D/3-D engine to facilitate creation of an adaptively de-interlaced frame image from at least a first interlaced field; and performing, by the 2-D/3-D engine, at least a portion of adaptive de-interlacing based on at least the first interlaced field in response to the at least one instruction to produce at least a portion of the adaptively de-interlaced frame image".

In response, the examiner respectfully disagrees. Herrera discloses in col. 10, lines 44-49 that "To understand how, in accordance with the disclosed embodiment, a **3D graphics engine within modified graphics accelerator 84** performs the motion compensation, **YUV 4:2:0-to-4:2:2 conversion**, and/or alpha blending processes, an exemplary 3D graphics engine/process is described in greater detail below" and in col. 2, lines 54-59 that "In accordance with the MPEG-2 specification, MPEG-2 decode sub-stage 20 conducts a Variable Length decode (VLD) 22, an inverse quantization (IQUANT) 24, an Inverse Discrete Cosine Transform (IDCT) 26, motion compensation 28, and a **planar YUV 4:2:0 to interleaved 4:2:2 conversion 30**". From the above passages, the 3D graphics engine and graphics accelerator 84 of Herrera converts the progressive video signal (planar YUV 4:2:0) to the interlaced video signal (interleaved

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4:2:2). Thus, the 3D graphics engine and graphics accelerator 84 of Herrera does “receiving at least one instruction for a 2-D/3-D engine to facilitate creation of an adaptively de-interlaced frame image from at least a first interlaced field; and performing, by the 2-D/3-D engine, at least a portion of adaptive de-interlacing based on at least the first interlaced field in response to the at least one instruction to produce at least a portion of the adaptively de-interlaced frame image” as claimed in claim 1.

In re page 5, applicants argue, with respect to claim 2, Herrera does not disclose an “at least portion of adaptively de-interlaced frame image frame image” as recited in claim 2 that is produced by “performing, by the 2-D/3-D engine, at least a portion of adaptive de-interlacing based on at least the first interlaced field” as recited in claim 1.

In response, the examiner respectfully disagrees. As discussed with respect to claim 1 above, Herrera does disclose the claimed adaptively de-interlaced frame image (planar YUV 4:2:0). Thus, the storing of the video signal of Herrera indeed stores the adaptively de-interlaced frame image produced by performing, by the 2-D/3-D engine based on at least the first interlaced field.

In re pages 5-6, applicants argue, with respect to claim 3, Herrera does not disclose, teach or suggest, inter alia, an “at least portion of adaptively de-interlaced frame image frame image” that is produced by “performing, by the 2-D/3-D engine, at least a portion of adaptive de-interlacing based on at least the first interlaced field”(claim 1), that Herrera can not, and does not disclose, teach or suggest, applicants’ claim 3 subject matter of “retrieving, by a graphics processor display engine, the stored adaptive de-interlaced frame image for display on at least one display device”.

In response, the examiner respectfully disagrees. As discussed with respect to claim 1 above, Herrera does disclose the claimed adaptively de-interlaced frame image (planar YUV 4:2:0) and disclose the claimed "retrieving, by a graphics processor display engine, the stored adaptive de-interlaced frame image for display on at least one display device" in col. 5, lines 50-64 "The above stated needs and others are also met by the computer system, in accordance with one embodiment of the present invention, that is capable of providing video play-back of an encoded data stream. The computer system includes a processor, a data bus mechanism, **a primary memory**, a display device, and a graphics engine that is configured to generate digital image data based on at least one command signal from the processor, generate motion compensated digital image data based on at least one digital image and at least one motion vector, **convert a YUV 4:2:0 formatted picture to a YUV 4:2:2 formatted picture**, convert the YUV 4:2:2 formatted picture to a RGB formatted picture, scale the RGB formatted picture, and convert the RGB formatted picture to an analog signal that **can be displayed on the display device**".

In re pages 6-7, applicants argue, with respect to claim 4, that the fact that the claimed invention is within the capabilities of one of ordinary skill in the art is not sufficient by itself to establish prima facie obviousness nor can the level of skill in the art be relied upon to provide the suggestion to combine references and, even if median filtering was incorporated into Herrera's disclosed system, one would still not be in possession of applicants' claimed subject matter because neither Herrera nor Faroudja discloses or suggests the claimed "receiving at least one instruction for a 2-D/3-D

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engine to facilitate creation of an adaptively de-interlaced frame image from at least a first interlaced field; and performing, by the 2-D/3-D engine, at least a portion of adaptive de-interlacing based on at least the first interlaced field in response to the at least one instruction to produce at least a portion of the adaptively de-interlaced frame image" as recited in claim 1.

In response, the examiner respectfully disagrees. As discussed in claim 1 above, Herrera does disclose the claimed "receiving at least one instruction for a 2-D/3-D engine to facilitate creation of an adaptively de-interlaced frame image from at least a first interlaced field; and performing, by the 2-D/3-D engine, at least a portion of adaptive de-interlacing based on at least the first interlaced field in response to the at least one instruction to produce at least a portion of the adaptively de-interlaced frame image" as claimed in claim 1.

Not only the specific teachings of a reference but also reasonable inferences which the artisan would have logically drawn therefrom may be properly evaluated in formulating a rejection. In re Preda, 401 F.2d 825, 159 USPQ 342 (CCPA 1968) and In re Shepard, 319 F.2d 194, 138 USPQ 148 (CCPA 1963). Furthermore, artisans must be presumed to know something about the art apart from what the references disclose. In re Jacoby, 309 F.2d 513, 135 USPQ 317 (CCPA 1962). The conclusion of obviousness may be made from common knowledge and common sense of a person of ordinary skill in the art without any specific hint or suggestion in a particular reference. In re Bozek, 416 F.2d 1385, 163 USPQ 545 (CCPA 1969). Every reference relies to some extent on

knowledge of persons skilled in the art to complement that which is disclosed therein. In re Bode, 550 F.2d 656, 193 USPQ 12 (CCPA 1977).

Finally, the expected benefits from median filter would itself has been evidence of obviousness. Expected beneficial results are themselves evidence of obviousness. In re Hoffman, 556 F.2d 539, 194 USPQ 126 (CCPA 1977); In re Skoll, 523 F.2d 1392, 187 USPQ 481 (CCPA 1975); and In re Skoner, 517 F.2d 947, 186 USPQ 80 (CCPA 1975).

In re pages 7-8, applicants argue, with respect to claim 5, that the fact that the claimed invention is within the capabilities of one of ordinary skill in the art is not sufficient by itself to establish prima facie obviousness nor can the level of skill in the art be relied upon to provide the suggestion to combine references and, even if spatio-temporal filtering was incorporated into Herrera's disclosed system, one would still not be in possession of applicants' claimed subject matter because neither Herrera nor Faroudja discloses or suggests the claimed "receiving at least one instruction for a 2-D/3-D engine to facilitate creation f an adaptively de-interlaced frame image from at least a first interlaced field; and performing, by the 2-D/3-D engine, at least a portion of adaptive de-interlacing based on at least the first interlaced field in response to the at least one instruction to produce at least a portion of the adaptively de-interlaced frame image" as recited in claim 1.

In response, the examiner respectfully disagrees. As discussed in claim 1 above, Herrera does disclose the claimed "receiving at least one instruction for a 2-D/3-D engine to facilitate creation of an adaptively de-interlaced frame image from at least a first interlaced field; and performing, by the 2-D/3-D engine, at least a portion of

adaptive de-interlacing based on at least the first interlaced field in response to the at least one instruction to produce at least a portion of the adaptively de-interlaced frame image” as claimed in claim 1.

Not only the specific teachings of a reference but also reasonable inferences which the artisan would have logically drawn therefrom may be properly evaluated in formulating a rejection. In re Preda, 401 F.2d 825, 159 USPQ 342 (CCPA 1968) and In re Shepard, 319 F.2d 194, 138 USPQ 148 (CCPA 1963). Furthermore, artisans must be presumed to know something about the art apart from what the references disclose. In re Jacoby, 309 F.2d 513, 135 USPQ 317 (CCPA 1962). The conclusion of obviousness may be made from common knowledge and common sense of a person of ordinary skill in the art without any specific hint or suggestion in a particular reference. In re Bozek, 416 F.2d 1385, 163 USPQ 545 (CCPA 1969). Every reference relies to some extent on knowledge of persons skilled in the art to complement that which is disclosed therein. In re Bode, 550 F.2d 656, 193 USPQ 12 (CCPA 1977).

Finally, the expected benefits from spatio-temporal filter would itself has been evidence of obviousness. Expected beneficial results are themselves evidence of obviousness. In re Hoffman, 556 F.2d 539, 194 USPQ 126 (CCPA 1977); In re Skoll, 523 F.2d 1392, 187 USPQ 481 (CCPA 1975); and In re Skoner, 517 F.2d 947, 186 USPQ 80 (CCPA 1975).

In re page 8, applicants argue, with respect to claim 6, that neither Herrera or Faroudja disclose, teach or suggest, applicants’ “performing, by the 2-D/3-D engine, at least a portion of adaptive de-interlacing”; therefor, such cited art also does not disclose,

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teach or suggest “controlling the 2-D/3-D engine to perform the adaptive de-interlacing prior to display by the display engine”.

In response, the examiner respectfully disagrees. As discussed with respect to claim 1 above, Herrera does disclose the claimed adaptively de-interlaced frame image (planar YUV 4:2:0) and disclose the claimed “controlling the 2-D/3-D engine to perform the adaptive de-interlacing prior to display by the display engine” in col. 5, lines 50-64 “The above stated needs and others are also met by the computer system, in accordance with one embodiment of the present invention, that is capable of providing video play-back of an encoded data stream. The computer system includes a processor, a data bus mechanism, **a primary memory**, a display device, and a graphics engine that is configured to generate digital image data based on at least one command signal from the processor, generate motion compensated digital image data based on at least one digital image and at least one motion vector, **convert a YUV 4:2:0 formatted picture to a YUV 4:2:2 formatted picture**, convert the YUV 4:2:2 formatted picture to a RGB formatted picture, scale the RGB formatted picture, and convert the RGB formatted picture to an analog signal that **can be displayed on the display device**”.

In re page 9, applicants argue, with respect to claim 7, that neither Herrera or Faroudja disclose, teach or suggest, applicants’ “performing, by the 2-D/3-D engine, at least a portion of adaptive de-interlacing”; therefor, such cited art also cannot, and does not disclose, teach or suggest “issuing 2D/3D instructions to the 2D/3D engine to carry out the de-interlacing of lines of video data from interlaced fields”.

In response, the examiner respectfully disagrees. As discussed with respect to claim 1 above, Herrera does disclose the claimed adaptively de-interlaced frame image (planar YUV 4:2:0) and disclose the claimed "issuing 2D/3D instructions to the 2D/3D engine to carry out the de-interlacing of lines of video data from interlaced fields" in col. 5, lines 50-64 "The above stated needs and others are also met by the computer system, in accordance with one embodiment of the present invention, that is capable of providing video play-back of an encoded data stream. The computer system includes a processor, a data bus mechanism, **a primary memory**, a display device, and a graphics engine that is configured to generate digital image data based on at least one command signal from the processor, generate motion compensated digital image data based on at least one digital image and at least one motion vector, **convert a YUV 4:2:0 formatted picture to a YUV 4:2:2 formatted picture**, convert the YUV 4:2:2 formatted picture to a RGB formatted picture, scale the RGB formatted picture, and convert the RGB formatted picture to an analog signal that **can be displayed on the display device**".

In re pages 9-10, applicants argue, with respect to claim 8, that Herrera fails to disclose the claimed "the at least one instruction includes at least one of a: line inverting instruction, a scaling instruction and a blend instruction" (claim 8) because the "at least one instruction" is to be executed by the "2D/3D engine" for the purpose of creating "an adaptively de-interlaced frame image from at least a first interlaced field" (claim 1).

In response, the examiner respectfully disagrees. As discussed with respect to claim 1 above, Herrera does disclose the claimed "performing, by the 2-D/3-D engine, at

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least a portion of adaptive de-interlacing” as recited in claim 1 and; therefore, the instructions disclosed in col. 10, lines 44-49 of Herrera anticipates the claimed “the at least one instruction includes at least one of a: line inverting instruction, a scaling instruction and a blend instruction” (claim 8) because the “at least one instruction” is to be executed by the “2D/3D engine” for the purpose of creating “an adaptively de-interlaced frame image from at least a first interlaced field” (claim 1).

In re pages 10-11, applicants argue, with respect to claim 9, that subject matter including “determining whether the at least one instruction is for the 2D/3D engine or for a display engine” is not disclosed, taught or suggested by either Herrera or Herrera in light of Faroudja because neither Herrera alone, or Herrera in view of Faroudja, disclose, teach or suggest the “at least one instruction” intended “for a 2-D/3-D engine to facilitate creation of an adaptively de-interlaced frame image from at least a first interlaced field”.

In response, the examiner respectfully disagrees. As discussed with respect to claim 1 above, Herrera does disclose the claimed “performing, by the 2-D/3-D engine, at least a portion of adaptive de-interlacing” as recited in claim 1 and; therefore, the claimed “determining whether the at least one instruction is for the 2D/3D engine or for a display engine” is disclosed in col. 10, lines 44-49 of Herrera.

In re page 11, applicants state that claim 10 is allowable for at least the reasons claims 1, 3, and 9 are allowable.

In response, as discussed above with respect to claims 1, 3, and 9 that the combination of Herrera and Faroudja discloses all the limitations of claims 1, 3, and 9.

In re page 11, applicants state that claim 11 is allowable for at least the reasons claims 2 and 10 are allowable.

In response, as discussed above with respect to claims 2 and 10 that the combination of Herrera and Faroudja discloses all the limitations of claims 2 and 10.

In re pages 11-12, applicants state that claim 12 is allowable for at least the reasons claims 5 and 10 are allowable.

In response, as discussed above with respect to claims 5 and 10 that the combination of Herrera and Faroudja discloses all the limitations of claims 5 and 10.

In re page 12, applicants state that claim 13 is allowable for at least the reasons claims 6 and 10 are allowable.

In response, as discussed above with respect to claims 6 and 10 that the combination of Herrera and Faroudja discloses all the limitations of claims 6 and 10.

In re page 12, applicants state that claim 14 is allowable for at least the reasons claims 7 and 13 are allowable.

In response, as discussed above with respect to claims 7 and 13 that the combination of Herrera and Faroudja discloses all the limitations of claims 7 and 13.

In re pages 12-13, applicants state that claim 14 is allowable for at least the reasons claims 8 and 10 are allowable.

In response, as discussed above with respect to claims 8 and 10 that the combination of Herrera and Faroudja discloses all the limitations of claims 8 and 10.

In re page 13, applicants state that claims 16-19 are allowable for at least the reasons claims 1-4 are allowable.

In response, as discussed above with respect to claims 1-4 that the combination of Herrera and Faroudja discloses all the limitations of claims 1-4.

In re page 13, applicants state that claims 20-23 are allowable for at least the reasons claims 6-9 are allowable.

In response, as discussed above with respect to claims 6-9 that the combination of Herrera and Faroudja discloses all the limitations of claims 6-9.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Herrera (US Patent 6,208,350 B1) in view of Faroudja (US Patent 5,754,248).

In consider claim 1, Herrera discloses all the claimed subject matter, noted 1) the claimed receiving at least one instruction for a 2-D/3-D engine to facilitate creation of an adaptive YUV 4:2:0-to-4:2:2 conversion is met by the 3D engine (col. 10, lines 16-49), and performing, by the 2-D/3-D engine, at least a conversion YUV 4:2:0-to-4:2:2 in response to the at least one instruction. However, Herrera does not particularly disclose that the 2-D/3-D engine is used for adaptively de-interlacing frame image from at least a first interlaced field.

Faroudja teaches a "universal" recording and transmission system for recording and transmitting both 24 fps (or 25 fps) motion picture film sources and non-film

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interlaced or progressively-scanned video sources in progressively-scanned video at a nominal frame rate of 24 or 25 frames per second (col. 2, lines 20-35).

It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the “universal” recording and transmission system as taught by Faroudja into Herrera’s system in order to record or transmit motion picture film sources and non-film interlaced or progressively scanned video sources.

In consider claim 2, the claimed storing the at least portion of the adaptively de-interlaced frame image for display is met by the buffer 56 of Herrera (col. 10, line 52 to col. 11, line 4).

In consider claim 3, the claimed retrieving, by a graphics processor display engine, the stored adaptively de-interlaced frame image for display on at least one display device is met by the memory controller 94 of Herrera (col. 10, line 52 to col. 11, line 4).

In consider claim 4, the combination of Herrera and Faroudja discloses all the limitations of the claimed invention as discussed in claim 1 above except for providing that wherein the step of performing adaptive de-interlacing by the 2-D/3-D engine includes executing 2D/3D instructions that result in performing median filtering.

The capability of median filtering the video signal to improve the quality of the video signal is old and well known in the art and therefore Official Notice is taken.

It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the well known median filter into Herrera’s system in order to increase the quality of the video signal to be displayed.

In consider claim 5, the combination of Herrera and Faroudja discloses all the limitations of the claimed invention as discussed in claim 1 above except for providing wherein the step of performing adaptive de-interlacing by the 2-D/3-D engine includes executing 2D/3D instructions that result in performing spatio-temporal filtering.

The capability of spatio-temporal filtering the video signal to improve the quality of the video signal is also old and well known in the art and Official Notice is taken again.

It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the well known spatio-temporal filter into Herrera's system in order to increase the quality of the video signal to be displayed.

In consider claim 6, the claimed controlling the 2-D/3-D engine to perform the adaptive de-interlacing prior to display by a display engine is met by the 3D engine of Herrera, col. 10, lines 16-49.

In consider claim 7, the claimed issuing 2D/3D instructions to the 2D/3D engine to carry out de-interlacing of lines of video data from interlaced fields is met by the 3D engine of Herrera, col. 10, lines 16-49.

In consider claim 8, the claimed wherein the at least one instruction includes at least of a: line inverting instruction, a scaling instruction and a blend instruction is met by the 3D engine of Herrera, col. 10, lines 44-49.

In consider claim 9, the claimed determining whether the at least one instruction is for the 2-D/3-D engine or for a display engine is met by the graphics accelerator 54 of Herrera, col. 10, line 52 to col. 11, line 17.

Claim 10 is rejected for the same reasons as discussed in claims 1, 3, and 9 above.

Claim 11 is rejected for the same reasons as discussed in claim 2 above.

Claim 12 is rejected for the same reasons as discussed in claim 5 above.

Claim 13 is rejected for the same reasons as discussed in claim 6 above.

Claim 14 is rejected for the same reasons as discussed in claim 7 above.

Claim 15 is rejected for the same reasons as discussed in claim 8 above.

Claims 16-19 are rejected for the same reason as discussed in claims 1-4, respectively.

Claims 20-23 are rejected for the same reason as discussed in claims 6-9, respectively.

Conclusion

4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

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5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Trang U. Tran** whose telephone number is **(703) 305-0090**.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **John W. Miller**, can be reached at **(703) 305-4795**.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

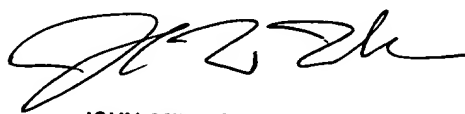
or faxed to:

(703) 872-9314 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

TT *TT*
April 3, 2003



JOHN MILLER
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600